

# AVIATION WEEK

A McGRAW-HILL PUBLICATION

APR. 5, 1948



## *Airfoam "Sleeperettes"* \*

Set New High in Comfort

The "Sleeperette"\*\*—Pan American's exclusive, new aircraft seat, completely cushioned with **Airfoam** made by Goodyear—sets a new high for travel comfort aboard Pacific-Alaskan Division

Clippers. Yes, there are three good reasons why operators and manufacturers prefer **Airfoam** for aircraft seats. First, this latex cushioning supplies comfort that lessens

flying fatigue. Second, its amazing durability eliminates seat maintenance and repair—seats last the life of the ship. Third, a weight saving can be effected by designing seats to take full advantage of **Airfoam**. For full information about this modern, luxury cushioning, write: Goodyear, Aviation Products Division, Akron 16, Ohio or Los Angeles 54, California.



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MORE AIRCRAFT LAND ON GOODYEAR

TIRES THAN



HONEYWELL quality is the result of close attention to every engineering detail. The spacing of electrodes in rods made of the dielectric fuel gauge is an example of such careful engineering. Very narrow spacing would have complicated the design job but (this reading) eight rods from covered wires bridging the gap between narrow-spaced electrodes.

To guarantee the accuracy of Honeywell's capacitor-type gauges, Honeywell engineers usually measure the largest diameter of water that could be made to cling to the

electrode surface, then spaced the tubular electrodes 1/8 inch apart to insure that water readings would be caused by droplets bridging the gap.

This example of Creative Engineering is typical of Honeywell's refusal to accept doing less than the ultimate in the quality of Honeywell products...A policy that means peak performance, long life, and maximum maintenance cost for the aviation industry. Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minnesota...In Canada: Toronto 12, Ontario.



**Creative Engineering**

**HONEYWELL**  
MINNEAPOLIS  
AERONAUTICAL CONTROLS



Absolute sensitivity—for Dual ADP with the RCA "21". Electrically operated. No mechanical connections. Non-damping pointer. Engine-pointer types available for single ADP.

## High Sensitivity...for accurate bearings on weak signals

### RCA "21" Automatic Direction Finder

Weight, only 30 pounds—installed



**RCA "21" Automatic Direction Finder**  
Left: General view. Larger units are read directly in all directions; smaller versions are provided in half-directions.

RCA Type ADP-Automatic Direction Finder

for aircraft navigation

and communications

radio reception of car-

rier or voice signals

For high signal sensitivity...for absolute bearing accuracy...for small size and light weight, the ADP is the answer. It is completely self-contained. It is only one-half the size of similar earlier equipments, and only one-third the weight—without sacrifice in quality.

It has an automatic direction finder, plus indicator and ADP control...the same new RCA "21" converts weight more than twice that of single ADP's. Signal sensitivity is better than 10 microvolts per volt over a range of

14 to 1750 kc. Signal-to-noise ratio is 20 db. or less than 3 microvolts per volt over a range of only 3.5 megahertz to 22 cycles, or 7 complete octaves.

For full radio receiver see the RCA "21", which meets the new ICAO and CAATC requirements...write RCA, Aviation Section, Department AD-2, Camden, N. J.

This brochure tells  
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## The Passenger is the payoff

Commercial airline operation pays off for the airline and for the aviation equipment manufacturer only if it pleases and satisfies the customer—the passenger.

The objective of Sperry, for instance, is to build equipment that helps the airline give the passenger a smoother, safer, more comfortable ride. He is the one toward whom much of the engineering staff, research and development work at Sperry is aimed.

Behind the instrument panel lies the cockpit of every modern airplane—steers, research and engineering skill. Sperry provides for airplane men, for



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example, the A-311 Geoskop\* for smooth level flight... the Automatic Approach Control for landings in all kinds of weather... the Gyroscopic Compass and other flight instruments for accurate information on position and direction... the Radar Analyzer to check engine performance during flight, saving valuable time on the ground.

Thousands of other products of Sperry are designed to help the passenger enjoy his trip from take-off to landing—throughout a wide variety of flight, aircraft, refueling and on time.

Meanwhile, Sperry research and engineering development go on in a continuous search for new and better aids for aviation.

## Democrats Beckon Reastor

Growing support for D. W. Reastor as Administrator of Civil Aviation is reported, not only from the unions but including endorsement of the Democratic National Committee. If appointment is made from outside CAA,

## NEWS SIDELIGHTS

### Forrestal's 3-Way Dollar

Republican Senators are not so pleased with Defense Secretary Forrestal's plan, though, that if a dollar is spent for the Air Force, Navy and Army each will get a dollar more. The Senate has voted only one major amendment against building the Air Force up to the 70 Group though that Eisenhower, Spaulz and both Presid. and Congressional Air Forces groups recommended as a bare minimum. His conference spokesman that equal expenditures would be required for Army and Navy.

The Argonne Station point and that this was then departmental policy, and therefore they will continue to go for Air Force expansion, top priority was the Navy's already large force but continued morale of the rest of the world and the seriously question whether the Army will ever be able to compete with the tremendous might of the Russians who already have c. 100 divisions in the field.

### Regulations Hit Feeders

Precious financial portion of civilian feeders has been encumbered by CAA rules providing for mobilization of flight equipment. Cost of installing terrain clearance indicators and flight simulators, and of changes in the aircraft in the National Defense program is being borne on the load carriers' shoulders.

### Sea-Air Lull

There is no lull for sea-air legalism this summer. The Sea Air Committee of the National Federation of American Shipping, for all practical purposes, has closed up for the season, and Tim Ford, the committee's successful chairman, has returned to California. But shipping companies will receive their due for another year yet.

Private shipping companies say that the maximum current salaries will soon exceed \$100,000, and that there will be a changed political complexion in Washington more receptive to the shipping position.

### Democrats Beckon Reastor

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advocate in the Hughes aircraft strength—4. Republicans and Democrats fail to agree on treatment of the new Democratic air force bill. One of those that Elliott Roosevelt carried influence in the view of the Hughes contractors, Republicans, in their turn, are wary of digging out the old "Pan American-domestic" charges against Brewster.

### Reed Set as Chairman

If Republicans retain their majority in the Senate and state, GOP Sen. Herb of Kansas is slated to become chairman of Senate Interstate Commerce Committee which handles all civil aviation legislation.

Present chairman of the Committee, GOP Sen. Walsh of Mass., has announced he will not seek reelection. Next ranking Republican, Sen. Tracy of New Hampshire, will not pursue membership of Interstate Commerce. In chairman of Senate Banking and Currency Committee.

Rand has promised numerous reforms advocated by railroads in Congress. Democratic Sen. Johnson of Colorado, seeking re-election, is president of Interstate Commerce, has announced for reelection and is generally considered a safe bet.

### Something for Everybody

The highly publicized Key West "agreement" of the Joint Chiefs of Staff, heralded as putting an end to inter-service rivalry and defining an overall strategic plan for U.S. defense, appears on close inspection to have added little of the basic inter-service problems Washington observes, or it provides only a new set of rules for that military planning should follow.

Now it is specifically excluded from commercial strategic bombing operations over Europe. The Air Force excluded fires and submarine operations, while leaving protection of shipping at sea, to us.

Despite organization of MATS to provide an air lift for all Armed Services, the Key West document authorizes the Navy to provide "air transport essential for naval operations." Both Air Force and Navy are authorized to conduct aerial mapping operations.

Most relevant to the inter-service agreement, that share of responsibility will be the Joint Chiefs of Staff with the Defense Secretary setting the dividing role in case of deadlock.





# **HOW TO INSTALL AN OIL SEAL IN 10 SECONDS FLAT**

- It can be done—even on an inaccessible shaft like the one pictured here—with a Johns Manville split-type Clipper Seal. Just three simple steps complete the job.

**5 REASONS WHY CLIPPER SEALS LAST LONGER - SEAL BETTER**

1. **Vertical Seal.** Clipper Seal has a vertical seal in every clip. This means it won't leak even if you turn it upside down.
2. **Cold Seal.** Clipper Seal has an instant - going **BANG** - as the metal expands to meet point of contact.
3. **Clipper Seal** is twice as well-sealed today as it was yesterday because it's made of stainless steel.
4. **Strong Clipper Seal** has the strength of a battleship hull. It can withstand temperatures from -40° to +100° F. and still seal effectively.
5. **Abrasives.** Clipper Seal will not be ruined by abrasives because it's made of stainless steel and is hard as rock.
6. **Though** Clipper Seal is made of stainless steel, it's not brittle. It's flexible enough so that the seal can be reset again.

(2) Hold the detachable guitar spring around the shaft (3) Spread the end apart at the split as shown above, and slide it over the shaft (3) Slip the guitar spring around its center in the end, and press the membrane onto the cavity

That's all! Installation is usually a matter of seconds. Cordy "down time" is reduced to a minimum. And you can capture the soil from a nozzle and nozzle — and without damage.

Completely new in principle, Clipper Seats have no metal case. Their rigid head and soft flexible lip are moulded into a single unit to provide a seal of superior lubrication-saving, dirt-excluding qualities. The greater spring advantage by pressure contributes to more effective sealing and longer life.

Clipper Seats are made in both split and endless types and are available for shafts up to 90° in diameter. They are recommended for sealing against oil, grease, water, air, gas and coolant at operating temperatures up to 450° F.

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Secretary Forrestal (right) confers with defense aides before Senate testimony. Left to right: Kenneth Royall, Secretary of Army; John L. Sullivan, Secretary of Navy, and W. Stuart Symington, Secretary of Air Force. (These have since died.)

## Fight For 70 Group Air Force Flares Again on Capitol Hill

Republican Senators attack Truman Administration throttle on airpower; \$775,000,000 boost urged in plane procurement appropriations.

Fight for the 70 Going Full Test will serve as Republican Senate's annual Defense Spending Bill. Senator Feinstein's new research defense program that theorized the Air Force would not be present 50 years later. A program that cost \$1.5 billion or more than \$775,000,000 in aircraft, engines and procurement funds. This program would be divided into \$75,000,000 for research and development, \$420,000,000 for Air Force plane procurement and \$280,000,000 for more

**Army peace plan**

Sharp questioning by Republican members of the Senate Armed Services Committee castigated Air Force Secretary W. Stuart Swanson and Chief of Staff Gen. Carl A. Spaatz to end Forrestal's own departmental gas rule and expand

Administration had abandoned plans to ask for fiscal 1948 defense budget supplemental appropriations and would

Comments on packaging all measures deemed necessary for canine needs is the final 1949 budget.

**Spain**—From—Republican Sectional Lodge Cahor Lodge (Miss.), William Knowlton (Calif.) and Lawrence Salter (Mass.) and Deneen Lyle Hill, of Alabama, indicated by their letter of protest that they were not satisfied with the rule Pernell and the Truman Administration have adopted to implement in their push to get a universal military training and pacetime draft proposal.

Under questioning both Sprouts and Dynamex were emphatic in their stand that the 70 Group program represents an improvement over previous models and that the 55 Group program ought to be discontinued as soon as possible. Beck stated flatly that the Air Force and the aircraft industry are now ready to begin implementation of the 70 Group program immediately if the necessary funds were applied.

and the Air Force has been able to maintain strength at 15 groups with procurement of additional new planes to man 14 groups under present type. Strength is planned so that the Air Force can obtain all personnel required by voluntary enlisted men and military training in so strong that Army Guards, Forces have sufficient trained discharge draftees belonging immediately to the Air Force.

The Air Force is not capable of using limited round trip flights on any of Russia's front lines as used by ISAF planes. He revealed that these planes would utilize new air refueling techniques which the Air Force plans to utilize in future Polar operations.

Beth Givens, Nancy conducted a series of experiments with air raiding over Brussels and New York, and her findings were the first application of B-29 refueling techniques. She and B-29 at Strategic Air Force could be credited with this refueling experiment as the first of its kind.

29. Capabilities—Strategic and the potential of the B-29 to meet 2030 requirements will, however, increase with the development of new weapons applications. Current and future interests lie in Gen George's Strategic Air Command which is positioned to move efficient B-29 operations through design control and other technologies. Sonnenberg's statement that the A-3B, B-29, and B-36

greater tactless ratios than the B-29 has been spurned by technical experts.

Presently problems are more seen out in the Air Force than pound Spanish steel. With the 5425,000,000 additional production funds available, the Air Force can buy twice as much iron. \$15,200,000,000 in new planes are being built. It is estimated that \$15,000,000,000 in present work will be required for the 3200 plane annual production can respond by the "B" wing program. The Air Force's Air Materiel Command report recommended a \$2,000,000,000 per annum appropriation for the Air Force.

► **Spirits.** Testimony—Gen. Spaatz revealed that the Air Force in recent months had to withdraw additional supplies from stockpiles at home and the final production was down 40%. These include unoperated radar sets, training aircraft, aircraft (aircraft modification programs (principally modification of B-29s) being removed from storage to return states) and various stock projects.

Spirits and the Air Force are now capable of producing limited strategic bombing but would be unable to maintain its operational rate for more than a few months due to lack of replacements. He revealed that a B-57 group will have 18 planes, a B-50 group 30 planes, a B-47 group 30 planes, F-84 fighter groups 72 planes and C-119 transport groups 48 planes.

Of the 95 Groups now activated 32 are in the United States and 23 should become air strength includes 11 bomber groups one long hauler group, 12 fighter groups, six light transport carrier and communication groups.

The Air Service and National Guard programs are still below required strength. Spaatz told the Senate Committee on Armed Services he has submitted a bill to Congress for 900 aircraft to meet requirements of increments of 77,946 officers and 100,000 men. The program is training 77,961 officers and 245,000 enlisted men against requirements of 45,703 officers and 102,951 enlisted men.

## Beauchamp Opens UAV Doors To Right-Wing Factions

Having consolidated his right-wing control of the big CID United Anti-Soviet Army and Agricultural Implement Workers, Pauline Walter P. Beauchamp has opened her doors to right-wing factions in both the CID and OSS.

Ahead some local units of the United Electrical, Radio and Machine Workers have voted to affiliate with the UMW-CIO. One is the Pratt & Whitney plant in Hartford, Conn.

## Branch Withdraws

Harlan Branch, CAB Board Member, withdraws from consideration of two pending cases involving Colonial Airlines. At the same time he described as "wholly untrue or wholly misleading" the Airline's charge that he is biased toward Colgan. He has not been informed of the last CAB decision, he said, by the lady Harlan, Edith Lee. The other is the fact that these cases are not continuing to offend CAB's position against Henry Wallace's third-party candidates and his the Marshall plan.

## Push U. S. Air Aid To China, Turkey

An debate on economic aid to Europe and Asia continued on Capitol Hill last week, culminating as the House Departmental Appropriations Committee held hearings on the future of China, Turkey and Greece.

Longest program is the eight and one-third group program for China which has been extended in the opening of U.S. peace plans toward China. The program was originally drawn up under Liard Lewis in the fall of 1947 and then suspended on the order of Gen. George Marshall, then special Presidential emissary to China. The program has been restored recently as part of the China aid program strongly backed by Republicans in the House and Congress.

► **China Programs.**—The program called for a heavy bomber group of Boeing B-52's, one medium bomber group of North American B-26s, four fighter groups of North American P-51s, and B-17s, Douglas DB-7s, three heavy transport groups of Curtiss Wright C-46s and one Lockheed L-10 Electra.

Total of 750 planes have been delivered—about 87 percent of the program—of which 135 still go to those in the Far East. Total cost of the program is \$12,751,472, \$1,251,516, and \$1,026,000.

U.S.A.C.I.C. has been fighting for several years with E.U.W. over aerial ground personnel. It has decided now to change base to India and has picked Mount as the first place to start.

U.S.W.C.O. Vice President John W. Drayton, spearheading the drive in India and aircraft plants, has urged in bringing airline mechanics under the banner of his union. (Winston, Wash. Dec. 29, 47.)

From Miami the Florida State CID Council ordered a blist against UMW-CIO's contemplated drive. In a resolution, it condemned demands of "total victory" by the CIO. Secretary Organizing Committee for having less rights.

A well designed aircraft and program for South American countries is already well under way. It has been labeled top secret at the request of the countries receiving supplies.

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ition of these areas to the Marshall plan. In a practical way, Brother's objective is wide open by two methods. One is the mobility of these leftist masses to secure protection or assistance from the National Labor Relations Board because they have not had the law on their side, probably caused by the lady Harlan, Edith Lee. The other is the fact that these areas are not continuing to offend CAB's position against Henry Wallace's third-party candidates and his the Marshall plan.



WRIGHT AERONAUTICAL INHERITS TURBOJET WORK.

First picture of the J47 turbojet engine, on which USAF has awarded an incentive test and evaluation contract to Wright Aeronautical Co., Cleveland, Ohio. March 15. Tech. Model Aircraft Corp. did the first work on the 5000-hr. thrust power plant, and continued to improve the project after it

went to Monrovia Manufacturing Co. for development and static tests. Monrovia was unable to produce the heavier and more powerful version for further repetitive testing of the power plant, so it was transferred to the Curtis-Wright engine subfactory with no legal reversion.

## Navy Reveals New Air Program

Calls for 310,000 men and double combat air group strength.

A Naval force of 310,000 men, headed by 49,754 officers and approximately double the Navy's current combat plane strength was proposed to Congress last week by Admiral Louis Denfeld, Chief of Naval Operations. The program was endorsed by Defense Secretary Louis A. Johnson.

Recent Naval plans call for the largest increases in personnel and combat aircraft. Activation of the new ships is planned with the exception of the 80,000-ton supercarrier, approved by the joint Chiefs of Staff April 10. West Indies. This larger task force for anti-submarine killer groups, six fast anti-submarine killer groups, six fast anti-airplane killer groups and two Marine amphibious support carrier groups will fill out the new program. All of the carriers and escort vessels proposed are now available but only slightly more than one combat or fast patrolling carrier is now available. The plan to double the combat air groups.

► Three carrier task groups will lose three large carriers of the Franklin D. Roosevelt class plus one smaller carrier of the Essex class. The thorax air attack group now available for this force will be enlarged to 74 groups.

► Four anti-submarine killer groups will have one carrier of the Saratoga class and three of the Essex class. Four escort air squadrons will be divided in eight.

► Six fleet air wings for long range reconnaissance and reconnaissance, one new patrol and antisub carrier, carrying 100 aircraft and 100 men at present strength of 34 squadrons will be

increased to 100 aircraft in five new wings.

Undersecretary of Defense, General G. C. and Neasey & Hause.

Courtland & Co. is appearing as an defendant in the economic trust financing and probably in several of the other trials. Courtland & Company At the Washington, D. C. shareholders, Trans-Caribbean have a paragraph rights, they will be asked to subscribe to the new issue. An amount of \$100,000 is authorized so this cannot all be offered to the public.

Acting as trustee of this equipment is the Sterling National Bank and Trust Company of New York. It is believed that this bank holds the account of Trans-Caribbean.

► **Trans-Caribbean.**—The current equipment trust financing by Trans-Caribbean has been more interesting implications although observers do not believe that it will represent the beginning of a new wave of financing of this type.

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HEADLINE NEWS

HEADLINE NEWS

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It is pointed out that only one plane is involved and considerable flexibility is lacking. Conferring the area of operations to be covered by the plane is one factor. While the value is required to maintain the plane in proper operating condition and to make all necessary parts and engine replacements, a series of conservative holding costs or spare storage亦被忽略。

Seibound of Western Airlines has agreed to loan him its equipment as a start to mortgage him. In this instance, however, there are some very important differences between the experimental test aircraft and the actual jet up.

► **Liquids.** Norden—authorities on aviation financing believe that it will be necessary to make arrangements to the bank before proceeding with the program for recording space parts with the CAA by five equipment trust financing, in the true spirit of the intent, is widely used.

The necessary amendments have been drawn up and are expected to be introduced in Congress.

## CAA Reports 5904

### Airports On March 1

Total number of airports in the U.S. has increased to 5904 as of Mar. 1, 1947, since CAA Administrator F. B. Lee reported last week, as compared to a total of only 4701 on Mar. 1, 1946. Privately owned commercial airports increased from 2107 to 2103 a year ago, while municipal airports totalled 1518 as compared to 1477, a year ago. Military airports decreased, transfer from 761 to 451, CAA intermediate (transient) airports decreased from 281 in 1946, and other airports (not otherwise) increased from 181 to 397, during the same 32 months' period.

### Jet Trainer

Production of an undesignated number of two-place T-38 jet fighter trainers for the Air Force has commenced by Lockheed Aircraft Corp.

First of its kind in this country, the new trainer is expected to use 10 to 15 persons in cost of training jet fighter pilots and will use the former from low power and propeller trains to the fast jet. Designation is TF-80C.

Cost controls will be used for all cockpit operations, the contractor pilot rating will be required west behind the instant. Most likely maximum takeoff weight will be 10,000 lbs., gross 14,000.



WING GETS PADDLE PROPS

These 13 ft. 4 in. paddle-blade propellers have replaced the shell-contaminating propellers formerly used on the B-36 Flying Wing. The original rotors were modified to 22 prop. fan blades, half of them on flaps, and several instances of accelerated changes in propeller pitch during flight. Like the others, the new prop. gets the standard. An F-86 will continue costly rolling propeller research.



FIRST FLIGHT VIEW OF CONVAIR B-36A

First production model of the giant Convair B-36A bomber is shown here on only first flight. Features revealed from prototype include new landing struts, strengthened landing gear, and quad-cylinder landing gear retracted into inner wing in this view. New version of the monster 10,000-mile long-range

bomber can operate from any field capable of handling B-29 bombers. Crew members are in two pressurized cabins, forward and aft of the heavier, which now carry a maximum of three McDonnell F-86 pursuit fighters. B-36A is now in production at Convair's Fort Worth plant.

## National Strike Tension Rising

**Unions ponder new strategy as CAB increases carrier's mail compensation.**

Industries regarding last week that the strike of National Airline pilots and ground personnel now in their third month may be brought to a head shortly.

Action of the Civil Aviation Board on boarder NAL's temporary mail rate increase, which was granted to the Air Line Pilots Association and the International Association of Machinists reportedly has sent the union leaders into a tussle on future strategy. Out of the two unions probably will come plans for precipitate rate changes to force retrocession of a 75-cent annual emergency fuel finding board.

► **Scope New Contract.** Paul P. Daveline, chairman of the National Mediation Board, has ruled that President Truman's settlement has not been officially ratified at the national level. NMB felt the strike did not return to the bargaining table because "no further strike or its threat are factors of the majority of remaining nonstriking unions." Should either ALPA or IAM, or both, fail to speed the strike so that other unions become affected, ratification of a Presidential order would be necessary.

Most likely trouble spots if the strike spreads are Miami, Newark and New Orleans, where ALPA and IAM have set up ticket lines at the airports. Should union pilots and ground personnel of other carriers using these fields refuse to pass the picket lines, the ca-

teristic air transportation system would be seriously affected.

► **Mail.** Mail Order—CAL's order granting NAL increased mail compensation of about \$442,000 for the period between July 14, 1946, and Dec. 31, 1947, was a minor blow to the unions, and it is expected that the issue will be contested in federal court.

The new rate will yield NAL about three and a half times its present mail rate compensation, which was granted Jan. 1, 1946, to Dec. 31, 1946. After Jan. 1, 1947, the rate will be about two and a half times the past level. While the base 60 cent a lbs. rate is still in effect for National, the increases are brought about through "maximum capacity factors" which generate the added premium for certain materials over loads, whether or not they are actually carried.

► **CAB Position.** The union claim that by increasing National's mail rate by 75¢, CAB has greatly strengthened the company's hand in the current dispute, but the Board said NAL's need for a higher temporary rate was determined independent of the effects of the current strike.

► **Disposition Interchange.** Meanwhile, ALPA has advised Gerald Ross, CAB vice chairman, that it is opposed to payment interchange agreements such as that negotiated between Central Airlines (PCA) and National (AVATION Week, Mar. 28). ALPA president Schlesold stated that "mountainous and proper inspection will be neglected and because there is a matter of passing the buck" under exchange agreements

and so the early construction stage. Then came Lorraine, Mo., where a total of \$16,800,000 will be spent on a long air base, and in Royal City, S.D., where huge capital expenditures for the B-36 are under construction at a cost of \$1,000,000 apiece. The Lorraine base will also have a B-16 hangar and a 9,000 ft runway. Approximately \$13,000,000 in construction contracts have already been awarded for this work. Both Lorraine and Royal City are planned as permanent air stations B-36 bases to be used in conjunction with staging and training fields in the Arctic.

► **Alaska-Two B-36 training fields are under construction in Delta at Mile 26, North of Anchorage, and at Nenana, Al Matanuska, approximately \$12,000,000 has been awarded. Construction contracts for this work have been awarded by the engineers with initial cost of the work planned estimated at \$15,000,000. Construction will include a second landing, training, storage and other facilities.**

► **Hawaii Field.** At Hilo, Kona, Hawaii, one of the 99 year lease bases owned by Great Britain, is being improved at cost of \$12,000,000. This field will be a permanent USAF base.

► **Europe.** Construction programs begin in Europe this summer by the Corps of Engineers for the U.S. State Department with a new base being extended to include airfield construction and improvement of existing fields.

Other Alaska construction includes \$16,000,000 worth of addition to El Prado, Alaska, and Anchorage principally for the B-36. Construction is imminent at Ladd Field, Fairbanks, with costs three times that figure scheduled to be awarded in subsequent final costs.

► **Pacific.** Okinawa is being built up as a permanent air base with \$12,000,000

already authorized for Kodama Air Base in the Philippines. Clark Field is being improved to the tune of \$85,000,000. This will be the largest single construction project in the Pacific under the new agreement with the Philippine Republic. On Guam, North Field, a surface B-29 base is getting a \$20,000,000 rehabilitation.

► **Atlantic.** In strategic Iceland, queen of the north Atlantic crossroads, Keflavik Airfield is being improved by the U.S. Corps of Engineers as a civil aviation base. Total of \$5,800,000 has already been awarded by the engineers with initial cost of the work planned estimated at \$15,000,000. Construction will include a second landing, training, storage and other facilities.

► **Harmon Field.** At Memphis, Tennessee, one of the 99 year lease bases owned by Great Britain, is being improved at cost of \$12,000,000. This field will be a permanent USAF base.

► **Europe.** Construction programs begin in Europe this summer by the Corps of Engineers for the U.S. State Department with a new base being extended to include airfield construction and improvement of existing fields.

### Airport Transfer

War Assets Administration has transferred the airport of Texas Field back to the care of Madison, Wis. The report was given the city after officials of Madison agreed to operate it as a civilian airport with CAA rules and allow non-military planes for exits.

# INDUSTRY OBSERVER

► Boeing is working on a new experimental long-range Navy patrol bomber (P90). It will be a hard-hulled plane and will probably feature an unconventional powerplant combination.

► Eastern Airlines has replaced all Hawker Standard T.1/Hawker 108 propellers on its 15 Constellations with public-domain 2F77-K-249 propellers, also made by Hawker. An Eastern Course three-a-piece of its No. 4 propeller now is sailing on last sail, causing the crashing of No. 3 engine. Early in February another Eastern Course plane had to make an emergency landing. National Biscuits of Stroudsburg is fitting blade parts of the propeller失事機 at Washington.

► Air Force Secretary W. Stuart Symington told the Senate Armed Forces Committee that other large aircraft comparable in size and range to the Convair B-70A are being considered for possible production.

► Vought F6U-1 Private Navy jet fighter has been modified by the addition of a large dorsal fin to improve roll control and aileron stability at high angles of sides. Production models will incorporate the improvement. A total of 36 Private Lightnings are in production.

► Secret of Pratt & Whitney engine bearing life is now revealed in fullness, for with a new element and some improvements available as an alloy for increased bearing resistance. The element is alloyed in a sandwich with lead, silver and copper layers applied to blades to prevent removal of the lead by corrosion while developed or introducing it in service.

► Navy has developed an exhaust nozzle blend for a streamlined turbosupercharger which produces 274 ft. of static thrust. The turbo is operated by a single case housing classifier from a standard jet engine at a speed of 20,090 rpm and turbine inlet temperature of 1669 deg. F. The type, 181-D engine is being developed for fighters, aircraft and guided missile boosters.

► Glenn L. Martin Co. lost \$14,353,516 on the abandonment of the 903, 61,273,367 sq ft a special 2-D model, 39,950 sq ft a special model 3-D 4 and 51,231,309 on the scrapping of completed parts due to the change in 3-D-2 design last year.

► General Electric Co. has started tests in its own helicopter facility at Schenectady, N. Y. The equipment consists of an indoor hook-lifted pit 150 ft. in diameter and 13 ft. deep with 3 ft. thick concrete walls. The \$180,000 facility is for use in conjunction with a GE Aerospace research and development program on jet-propelled helicopter design in which emphasis is placed upon the use of the tail boom and the rear fuselage as a lifting unit.

► KLM will replace their DC-6 on their Brussels-Australia route with DC-8s within the next few months. Schedule time on this run will be reduced by about ten hours.

► Air Force claims it has a revolutionary type rocket engine using a new solid oxygen-based fuel. Both will be used in the "WAC Starburst" test rocket.

► Goodrich Triplets lightplane user centre at the Cleveland National Air Races has been changed to a 4,000 ft. by 880 ft. rectangular course that puts the entire race in view of grandstand spectators. Last year's course had one leg behind the grandstand where planes complained of turbulence and bad winds. The 1945 race will be limited to 32 miles.

► First Canadian built jet engine, A V Roe's Chieftain, has passed its initial ground tests at Malton, Ontario. This experimental engine was designed and built for the Royal Canadian Air Force.

► Republic Aviation Corp. has now delivered 200 Thunderbolts (P-47) to the Air Force and is turning out better than 900 single-jet fighters at a rate of 1.6 per day. Total order is 1,600 planes.

► North American will move its AT-6 trainer modifications line from its Los Angeles plant to the former Cessna plant at Downey, Calif., where it has leased 40,000 sq. ft. of floor space.

## South American Race To Feature Miami Show

Dog eat dog at the 1946 Miami All-American air races will be a \$250,000 free-fall air race around South America to start and end in Miami. Total distance of the race is expected to be about 10,000 miles, although the exact itinerary has not yet been determined. Several racing companies have already indicated interest in backing such a race.

Another innovation in the 1946 amateur will be the participation of delegations from the Central and South American Caribbean countries. Brazil, for instance, will be the \$15,000 Continental Motors Corp. trophy race for "holiday" races in the 1946 calendar class the gallant four-hundred-day tour due to the gasoline shortage and an expanded program of aerial activities. The races are scheduled for Quito, Ecuador, Jan. 7, 1946.

The 1946 amateur air races at Cleveland will feature a special pylon race for foreign pilots and airlines, according to a recent committee decision.

## AVIATION CALENDAR

Aug. 9-10—Pan American Aviation Corporation Annual Convention and Trade Show, Atlanta, Ga. 5-8-46—National Intercollegiate Air Races, Cleveland, Ohio.

Aug. 10-12—All-American Aviation Conference, New York City.

Aug. 10-12—Second Annual Trans-Pacific Airlines Conference, Honolulu, Hawaii.

Aug. 10-12—Second Annual Western Aircraft Maintenance Meeting, Seattle, Wash.

Aug. 11-14—Second Annual Aviation Maintenance Management Association Meeting, Milwaukee, Wis.

Aug. 12-14—Second Annual Meeting of the Society of Experimental Test Pilots and Preliminary Instructors, Detroit, Mich.

Aug. 14-16—Annual International Meeting of the National Council of the American Mathematical Association, New York City.

Aug. 14-16—Annual Meeting, American Institute of Mathematics, Princeton, N. J.

Aug. 14-16—Annual Meeting of the American Mathematical Society, Boston, Mass.

Aug. 14-16—Annual Meeting, National Society of Professional Engineers, New York City.

Aug. 14-16—Annual Meeting, National Council of the American Mathematical Association, New York City.

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## BRIEFING PRODUCTION NEWS

**Montgomery-Honeywell** Regulator Co. is delivering new electronic altitude pilot equipment for the Boeing B-50 and Convair B-36 bombers. The Avionics Division is working on development and production contracts for several million dollars worth of special equipment, including electronic fuel gauge substrates standard for military and commercial applications. Research and development are in progress on special jet aircraft control equipment.

**Republic Aviation Corp.** has sold Associated Marine, Inc., Syracuse, N. Y., to Tenter Corp. of Chicago for \$1,000,000. This will give Tenter's a certain supply of water-cooled engines for the Textron Torpedo amphibians. Avionics engine production is scheduled to reach 1000 a day. Associated will continue manufacture and development of Franklin aircraft engines at under \$40 hp.

**Glenn L. Martin Co.** has received a down payment of \$1,000,000 from the first subscribers of the Model VR-18, a three-place vinyl monocoque aircraft at a flat, white powder. Annual production at the new \$4,000,000 factory is scheduled to reach 25,000-28,000 b.

**Lockheed Aircraft Service, Inc.** has added three new international customers at its MacArthur Airport base on Long Island. Pan American Airways, American General and Pan Am Royal have contracted for modification and maintenance services, including a complete original fleet tank stripping and painting job on the PAA DC-6.

**G. M. Cessna and Co.** reports a 1947 production of over 1600 passenger transports and liaison aircraft aircraft and general aviation. These units convert passenger into an electrical signal at the switch, thus signal being carried into the airborne transmITTER and/or telecrometer to the ground. In addition to these operations power plant work, Cessna last year over \$4,000,000 worth of muscle airplanes during 1946.

**SKF Industries, Inc.**, ball and roller bearing manufacturer, has established distribution headquarters at Charlotte, N. C., to increase service in North and South Carolina, 30 customers in eastern Tennessee and two customers in northern Georgia.

**Hawker Standard division of Vickers Aircraft Corp.**, announces that eight aircraft operating in an airbase have selected three-blade Hydrodyne propellers for installation at their Customer-Lines. These include Western Air Lines, Pan American World Airways, Central and Northeast Airlines. Foreign airlines include FAMA of Argentina, KLM of Holland, Orient India, SABENA of Belgium, Trans Australian Airways and Aerovias de Brasil. The blades are 15 ft. diameter, hollow steel, spun tipped, electric driving, rapid reverse driving and reversing.

**Amput Engineering Corp.** is holding a graded training course for a select group of officers of Army Ground Forces, Navy, Cavalry and Engineers. The course includes 19 lectures and instruction held twice a month to regular and reserve institutions in the Southern California area.

**Bethleem Steelmen Casting Corp.**, has purchased a \$100,000 plant in Bethlehem for the G-60 Elevator Corp. which will produce castings and castings for the marine and other industries. Employment between 300 and 350 is anticipated.

**General Electric Co.** announces a new savings and stock bonus plan for its 700,000 employees. The company will contribute up to 15 percent of the employee savings in the form of G-E stock, provided the savings are retained for a period of five years.

**Rapidele Aviation Corp.** has completed the first step of P-84 Thunderjet initial training trials for delivery to the Force. The set consists of 14 planes weighing about 12,000 lbs., 12 of which were designed and built by Rapidele. The others are in a customer GE-Alliott TG-180 turboprop engine. The design units include subsystems of landing gear, electrical system, radio system, environmental insulation, hydraulic system, instrument installation, air conditioning system, pilot's seat ejection equipment, canopy operation and pressurizing system, fuel system and oxygen cannulae.

**Boring Airplane Co.** is producing B-50 bombers at a rate of seven per month, with 55 already delivered. Last flight C-97s are on the floor and the first production Stratobomber is expected to fly early this month. Second XB-47 is in final stages of assembly. Employment is 10,000, up about 1800 since Jan. 1.

285,897 (49 percent government) UAC's profit was \$6,034,295.

On work at other divisions, UAC reported:

- **Chase Vought** completed its P-84 Navy fighter contract in 1947 and started deliveries on an order for 325 F4U-5. F4U-5 production is expected to continue throughout most of this year and will be supplemented by the output of CV's first jet plane the P-90 Fury.

CV has submitted to the Navy its proposal for a five year lease of the P-84. North American's P-51B fighter is to be delivered to Brazil under the Mutual Defense Assistance Pact. (Aviation Week, Dec. 29, 1947). Provisions for lease extensions and "for a right of first refusal to purchase the plane" are included. It will require a year or more to transfer CV's operations from Stratoland.

- **Sikorsky Division**, in addition to its shipments of military, Naval and commercial versions of the four-place S-51, has delivered the first of three XB-38-18, five-place Naval copies.

- **United Aircraft Export Corp.** shipments in 1947 were more than double the export sales of 1938, which the company counts as the last pre-war year.

### Continental's Aircraft

Leaving off of the personal plane industry shielded Continental Motors Corp.'s aeroengines revenue nearly 50 percent in the year ending Oct. 1, 1947. Sales dropped in the aviation division from \$14,500,000 in 1946 to \$8,000,000 in 1947.

The company, however, successfully handled a production order for 1000-seat jet engines for the government and expanded its research and developing work for military and commercial programs during the year.

Continental Motors total sales in 1947 were \$69,947,661 or 7.7 times greater than an average sales in 1939 and 1940. Aggregate sales of eight competing engines in the same period increased only 1.9 times in the same period.

Net loss for the year, after a tax credit of \$7,680,000, was \$2,049,216, compared with a net loss of \$3,545,338 in 1946 after tax credit of \$1,17,32,000.

Sales for the first quarter of the current fiscal year totaled \$20,747,296 compared to \$14,882,763 a year ago. Net profit, after provision for a \$175,000 income tax for federal income taxes, was \$195,874.99. That compared with a net loss of \$1,379,649 in the corresponding period a year ago after a tax refund credit of \$1,145,000.

Continental's aircraft fuel load, the main item in its products, Chairman Robert S. Kuhn said in testimony before Congress, is \$1,876 and its derivative weight is 1,047. Price is \$79 per barrel. This is \$5.98 less for Kuhn and \$7,449 less for Kuhn than they received at the previous year.



# SIGN OF QUALITY AT OVER 1,000 U.S. AIRPORTS



## The Flying Red Horse!

You'll find this world famous sign at more airports than any other oil company's trademark! All over the United States, important, strategically located service stations for Socony-Vacuum produce always within striking range.

Why does the aviation industry have such confidence in the Flying Red Horse? It is the trademark of Socony-Vacuum, famous pioneer in aviation fuels and lubricants. It protects the Hardy Process of

Catalytic Cracking, the TCC Process for continuous refining, the atmospheric "Magic Seal" Catalyst—helps aeroliners flying safely and performance

Today, with 42 years' progress in petroleum behind it, Socony-Vacuum has an important part in future developments—researching new fuels and lubricants for supersonic jet planes, rockets and the peaceful uses of atomic energy.

## SERVES EVERY BRANCH OF AMERICA'S AIR INDUSTRY!

SOCONY-VACUUM OIL COMPANY, INC., NEW YORK • MOBIL OIL CORPORATION, NEW YORK • GENERAL PETROLEUM CORPORATION, NEW YORK

## How Friction looks to

Dr. Seuss



\* Widely known as an author of children's books or cartooning, cartoonist and artist at once, Dr. Seuss has written and illustrated over 60 books. His new book, "How Friction Looks to You," will be published by Random House.

*The Friction Finch, of course you know,  
Is naphtha motor. He loves to go  
To places where mandatory solvents  
And frusticate man-ejects-evert  
By lowering down on shingles and wheels  
It rubs sleeves over and hocks,  
It rubs rub, and rub, and rub, and rub  
And rub many your profits, blub*



To Dr. Seuss friction is a nightmare. It's a nightmare to the manufacturer, too! For friction is the greatest enemy of production. It steals time. It steals speed. Wears down moving parts. Kicks up costs.

Ball bearings help end this. They

assure greater regularity, more precise alignment of parts. By permitting higher speeds, they increase production—bring lower costs.

New Departure, world's largest maker of ball bearings, offers helpful technical literature. Write for it.

*Nuthing softs like a ball . . .*

## NEW DEPARTURE BALL BEARINGS



NEW DEPARTURE • DIVISION OF GENERAL MOTORS CORPORATION • MINTON, CONNECTICUT • BRANCHES IN ALL PRINCIPAL CITIES

AVIATION WEEK, April 5, 1948



Canadian-built SG Mark VI-D is heavy payload tool. Engine runs down aft of cabin to aft of engine is unusually covered by removable panels.

## Canada's Bid in Helicopter Field

First production model of SG Mark VI-D rotorcraft now flying, with further output scheduled to begin upon certification.

### By ERVING STONE

A production model helicopter, the first-ever for a bladeless SG Mark VI-D, is Canada's latest bid in the field of rotary-wing construction. Sprague of the company which recently made its first flight, is a group of industrial interests based at Lachine, Quebec City, of Montreal.

Heavy-lifted aircraft development funds were available, the last British war era versioned helicraft practice was used

and converted signs to produce a seem-

ingly sound and compactly designed

airframe. Design by U.S. engineers—Barney W. Sosner and Selma G. Gottlieb—the general configuration of the craft indicates that this was influenced by American arrangements.

► **Production Plans**—Production is anticipated to begin immediately after certification in the Canadian Civil Aviation Board. And since design has been in association with CAR 66, speedup certification in that country will be sought at time of applying in Canada. The VD's test are reported to have shown that the craft is remarkable for fine vibration, stock shake, and noise rating of control responses.

This is attributed to the high speed (200 rpm), low-silence fan-bladed

motor, control linkages permitting the blades to lag or lead without affecting the pitch setting, exterior engine oil blade extension links and other various factors arranged so as to prevent leading drag, while the blade change position is plane of rotation and our basic control member connecting the cockpit with the control servo on having partly immovable axes, thereby preventing possible rotor forces from striking the stock.

### BASIC DATA SG MARK VI-D HELICOPTER

Weight empty	11,000 lb.
Gross weight	13,000 lb.
Passenger load	1,000 lb.
Payload limit	1,000 lb.
Altitude at 200 rpm, maximum data	10,000 ft.
PHOTO BY RAYMOND H. COOPER	
Blade diameter	34 ft.
Radius travel	40 ft.
Blade sweep rate, min.	400 rpm
Max. rpm	600 rpm
Altitude	10,000 ft.
Temperature	50° F.
Wind, 10 sec.	10 ft. per sec.
Wind, 1 hr.	5 ft. per sec.
Price	\$ 6,000
Power rating	1,000 hp
Power loading	15 lb. per hp
Power factor	15 lb. per hp

Estimated Performance	
Maximum rate of climb, 100 ft./min.	400 ft./min.
Maximum forward speed, 100 mph.	100 mph.

► Performance—Powered by a 105-kw Franklin engine, horizontally mounted, the VI-D naturally would be part in the small helicopter class. It is capable of carrying four passengers (in addition to pilot) and 21 lbs. of baggage for 120 mi. This performance is claimed to be the result of low-profile drag of the blades and high mechanical efficiency of the transmission.

The latter unit is provided with separate pressure feed lubrication. It also has a cooling arrangement interconnecting fan and the housing which is located directly in front of the blades to assist in the horizontal circulation. (This also is said to be the result to added additional heat dissipation.)

► Flight as a two-seater, the range will be increased to 300 mi.

Dual controls can be installed so that an instructor and student can sit side-by-side with the instrument panel directly in line of vision of both.

The panel is in the form of a triangle, triangular to minimize interference with visibility from the cockpit and large enough so that the nose gear can be retracted in all directions. Color warning lights are used to signal obstacles which would endanger the occupants in the event of a hard or crash landing.

► Construction—A soft, fabric

AVIATION WEEK, April 5, 1948

ENGINEERING-PRODUCTION



Details of SE Mark VI D10 jet, blade, and transmission arrangement. Details are: 1, dog belt; 2, dog wheel; 3, reverse thrust; 4, reverse shroud; 5, fuel and bypass mixture; 6, collector pitch control; 7, transmission flange; 8, blower; and 9, C-frame connection between combustor and stator case frame.

three dozen are included in the cabin equipment—six each for the pilot and six passengers, and another for the passenger sitting in the rear.

For each landing position, the structure around the tubes is properly braced with strong bracing below the floor line and in the spine.

The four-bladed 54-ft-dia propeller is designed to be fully slippage. Bladite arms are of wood construction, fabric-covered. The air intake siren is of the same construction but is a two-bladed semi-oval type.

Ends of maintenance are considered of prime importance in the design. Each component is fully removable, and the seal-type of construction makes for easy sealing and replacement of parts.

#### **French Jet Program**

#### **Gathers Momentum**

(McGraw-Hill World News)

Slow to show any results in the field of jet power, France's researchers are making efforts to accelerate current developments.

Blended by long lists year of vital program during the war, they do not have any proper word based for jet work. For a while they were able to use English facilities, but the British are now too crowded with their own work.

Presently, the French are building a large tunnel, which will approach Mach 1 at Altitude in the Alps, but it will not be ready until 1958. And though construction has started on a new engine test station near Paris, the unusual lack of facilities requires that jet prototypes be built, either full size or in a flying model, on calculations only, and then tested in flight.

Several jet engine under development, notably those by the Ratois organization and also by a group of German technicians working in the south of France under the name of Turbomeca. The latter have tried to develop some rather unusual designs. Among these will be one plane which features an exploded jet engine.

But probably for the next few years, France's jet planes will be powered by Rolls-Royce's "Nene" turboprop, and the ATAR.

The Nene is being built under license in France by an organization who hope that eventually it may be developed into more advanced aircraft.

The ATAR is being developed under the sponsorship of the SNECMA, l'Institut National d'Etude et de Construction de Mécanique d'Aéronautique, the nation-wide company which groups the former Gnome Rhône, Renault Air and Avio-Loiret-Socat in a group of about 100 German and French technicians.

Engineers of the SNECMA willingly admit that the first ATAR is not yet completely mounted, though several nose are already under construction in the company's assembly plant. Five nose are currently in production, and the ATAR have been selected.

The ATAR is a development of the German BMW 003, advanced considerably in many of the same techniques. Designing in much 4,000 lb of thrust at 7,000 rpm, it is ring-shaped, 12 ft long overall, with a diameter of 35 in. It has a seven-stage and compression chamber air chamber and single nozzle. Design compressor ratio is 6 to 1.

Air flows have already been made with parts of the compressor, as an refining speed of Mach 7. In addition,

The current features of the ATAR are pointed out by design engineers. The compressor has no shaft running through it, but is, instead, a disc type—the case consisting of a series of seven disks with torched edges which overlap each other. Blades are fixed in the torched edges of the disks. Secondly, the turbine blades are cooled by a jet of air coming from the rear.

But SNECMA officials emphasize the ATAR is far from being the jet engine of the future. They don't know yet what formula they want to follow, but have 120 technicians and designers employing different ideas. They expect to make their choice and start the new prototype sometime this year.

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#### GEORGIA

Atlanta, Atlanta Aerospace Corp., Atlanta Industrial Airport.

#### IDAHO

Chubbuck, Western Airlines, Inc., Western Airlines Airport.

#### KENTUCKY

Louisville, J. L. Standard Aircraft Equipment Co., Louisville Field.

#### MASSACHUSETTS

Boston, New England Airlines, Inc., Boston Municipal Airport.

#### MICHIGAN

Detroit, J. S. Sennett, Inc., Detroit City Airport.

#### MINNESOTA

Minneapolis, Minneapolis, Inc., Minneapolis Field.

#### NEW YORK

Buffalo, Buffalo Aeronautical Corp., Buffalo airport; Albany, J. L. Standard Aircraft Equipment Co., Roosevelt Field.

#### OHIO

Cleveland, Southern Airlines Corp., Cleveland Municipal Airport.

#### PENNSYLVANIA

Dallas, Southern Airlines Corp., Dallas Love Field Drive.

#### TEXAS

Seattle, Pacific Aviation Corp., Seattle, Seattle.

#### WASHINGTON

Montreal, P.O., Aviation Béland, United, 2485 St. Park Ave.

**Eclipse-Pioneer** DIVISION OF  
TETERBORO, NEW JERSEY





## ALBUM OF DESIGN DETAIL

### LOCKHEED XR60-I CONSTITUTION



**OUTER WING PANEL.** Assembly, above, shows how structure of outer wing section ready to receive ailerons. Rib section has

rectangular opening at forward end to provide travel space making wing main area accessible for quick inspection and repair.

**SEGMENTED FLAPS (below).** Two identical aerofoil-shaped flaps on the main wing section on the Lockheed Constitution—for units

pivoted moderately on each wing structure. Separates air intake/charge site and each flap span of 113 in., 87 in. chord.



## Information Tips

### COMPENSATOR DESIGN BASIS

Just released by Alcanalco Basic Research, this book of three volumes series by Technical Document No. 10 of Standard Avionics Division, describes the design to prove compensation important, operation, maintenance, and reliability of aircraft compensators. Other two numbered volumes are Aircraft Power Plants, and "Aircraft Structural Design," both available from the Alcanalco website. Price: \$12 per volume. Postpaid. First payment basis covers subjects generally regarded as necessary for the design of aircraft compensators. Chapters step-by-step examine (1) presents basic definitions of flight aircraft; (2) aircraft compensators; (3) aircraft compensators; (4) aircraft planning; the fundamentals of aircraft structures; various theories, procedures, and methods used in aircraft design; (5) aircraft design and construction. Published by Newcomer, 900 Rock St., 100 W. 40 St., New York City. Price: \$14.95-\$19.95.

### Job Shop Simplified

Volume 10, written with the automobile industry in mind, is titled "Job Shop Simplification." The Development of Assembly Quality Control Systems for Job Shops and Contract Production, prepared by McNease R&D Dept. 1000 1/2 W. 40 St., New York City. Volume 10 is presented, mostly in tabular form, to help the job shop manager and his workers. Included in section dealing with quality control systems is the work of British and Japanese in developing new methods and processes. It is the result of many years of research and development by U.S. and American engineers, and German, English, French, Italian, and Canadian experts. Numerous tables, charts, graphs, and other data make this publication a valuable reference for both beginners or veterans and for managers or technicians and projectors and for business men interested in the various types of assembly, quality and cost control systems. The contents of this book are covered in four chapters. Included are notes on quality problems, compensated assembly, assembly planning, and planning of assembly processes and other reference materials. Price: \$10.00.

### Carpet Upholstery

The Incorporated Engineers, Woburn, Massachusetts, have issued Circular 101, "Upholstery and Carpet for Airplane Seats." Circular 101 contains a detailed description of the various types of airplane upholstery and carpet, their characteristics, and types of fibers used in airplane seats and their seating requirements.

### Alcantra Upholstery

Mr. Wilson, a Alcantra products specialist, has developed a new material and newly developed methods of production. These are described in "The Care of Materials," a booklet published by Alcantra International Corporation, 1000 Franklin Street, Los Angeles, California. Address: 1000 Franklin Street, Los Angeles, California 90010.

### Airline Tinting

Mr. Wilson, a Alcantra products specialist, has developed a new material and newly developed methods of production. These are described in "The Care of Materials," a booklet published by Alcantra International Corporation, 1000 Franklin Street, Los Angeles, California 90010.

### Seat Fabrication Requirements

Problems like aircraft upholstery and seat fabric are discussed in "Seating Seats," Volume 10 of the Standard Avionics Division of Alcanalco Basic Research, published by the Alcanalco website. Price: \$12.00. Address: 900 Rock St., 100 W. 40 St., New York City. Price: \$12.00. Address: 900 Rock St., 100 W. 40 St., New York City. Price: \$12.00.

### Antique Decoupage

On March 28, 1968, antique decoupage techniques were taught to students in a class of 15 students conducted by Mr. M. H. Phillips, author of "Antique Decoupage," published by the Farber Publishing Co., 1010 Madison Avenue, New York, N.Y. Price: \$12.00. Address: 900 Rock St., 100 W. 40 St., New York City. Price: \$12.00.



**Bridgeport's new fabric will adorn  
United Air Lines' Mainliner "340"**



Inspired by the majestic beauty of Boeing's first Stratocruiser,

"Queen of the Airlines," Bridgeport designers have once again created a distinctive new upholstery fabric for an exciting customer. Woven in an exclusive pattern, in both powder blue and coco beige, the new cloth will be used solely for upholstering the chairs in two tons for outfitting United Air Lines' new Stratocruiser fleet. Because the new fabric is made of the finest quality wools and worsteds, United's passengers will find it delightfully soft and far-smooth, yet non-slippery. Maintenance crews will like it, too, for all Bridgeport Aircraft Fabrics. It resists stains and dirt and makes periodic cleaning easier and faster. It is certified flame-proof by the CAA. What's more, special sewing and stretching characteristics will speed installation by as much as 25%.

Bridgeport's specially designed aircraft upholstery fabrics are available in many unusual weaves and appealing colors, or Bridgeport designers will create for you an exclusive color or pattern. Write for full details and sample swatches of this extremely lightweight and durable fabric.



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# NEW AVIATION PRODUCTS

## Jet Heat Gage

Designed to measure gas heats of 5000 deg F., new laboratory jet-heat indicator, Model 261, offered by Fairchild Camera & Instrument Corp., Jamaica, N. Y., is intended for use with turbines, compressors, and jet-powder research work. Insertion of probe into gas stream and manipulation of signal control valve are only operations required in obtaining measurements. Claimed accuracy is 1 percent at 2000 F. and 2 percent at 5000 F. range. Rose plasma-type gas temperature system is derived from thermocouple and obvious disadvantages inherent of thermocouples. Nitrided probe is annealed for heats to 2300 F. and water-cooled units withstand airflows for temperatures to 5000 F.



## Improved Lockam

Improved design of its semi-steerable, improved lockam is announced by Gop-Nat Co., 306-B North Michigan Ave., Chicago 4, Ill. Change gear ratio and deeper triangular deflections at set stop, making greater flat area deflection of threads for enhanced holding power, prevent removal and reapplication more frequently, with reduction of high-locking value, and provides effective locking in threads not held close together.

## Clean Space Booths

Produced primarily as safety tool for use in cleaning floors and walls of paint spray booths and other hazardous locations, the "Quick-Dry" kynarous, developed by Phoenix Paintbrush Co., Manchester, Conn., permits different areas within the same booth without time consuming manual adjustments. While in flight, kynarous can be wired independently of add-on conduct, and instantly tightened, if emergency, by pulling adjusting strap. Device is standard equipment on company's booth.

Milwaukee, Wis. Device is constructed of corrosion-resistant non-sparking aluminum housing with serrated edges so constructed that scraping edge is against floor or other surface involved. Serrations insure better cutting edge and ensure self-sharpening action to tool. Unit is 6 in. wide with deflected back. Unit is 6 in. wide with deflected back.

## Aids Washing, Degreasing

Adaptability for use in aircraft repair and windmill shops is now potential



steel box for washing and degreasing specimens announced by Beck Engineering Co., Pittsburgh, Pa. Unit is constructed of heavy-duty steel and is made in six standard sizes.

## Snake Tunnel

Compact two-dimensional Snake Tunnel, with barrel, suitable for cleaning, draining, inspection and school maintenance, has qualities few snakes possess and overcome problems created by Aerobat Development Co., Pasadena, Calif. Contractors supply of non-toxic non-corrosive white snake, is generated 2 min after starting. Cables are mounted in separate box containing snake generator, receiver and fuel supply tank. Test section 17 x 24 in. is easily adaptable for installation and change of model. Blowing mounting window, permits angle of attack and counter-clockwise rotation, even while during operation. Four standard models are offered. Snake velocity and beam intensity are stated to be easily adjustable with precision control through electrical and mechanical means. Snake head with 10 uniformly spaced nozzles gives uniform and parallel streams.



## Aviation Spark Plug

Designed for commercial engines by AC Spark Plug Div., General Motors Corp., Flint, Mich., was CAA approved aviation spark plug, AC-181. Instant rate pressure insulation made insulator to give positive insulation between core and shielding barrel and prevent downward flash over. It is also claimed to eliminate dirt trap between core and shielding barrel insulator. Silver road-length core, conducts heat away from firing end. Increased clearance around insulation is intended to afford better insulating. Electrodes are platinum also, and shell and threads are zinc plated.

## Carless Arc Torch

Suitable for aircraft industry applications is new carless arc torches for use with ac welding machines. Offered by Lincoln Electric Co., Cleveland, Ohio, unit is designed to extend use of welding equipment to jobs where heat is desired without melting metal worked on. Device is adaptable to production and maintenance work such as



soldering copper or brass parts, pre-heating small areas prior to welding, heating and straightening heat-worked brass, aluminum sheet and casting, and laying powder type of heat working material to metal parts. Trigger and control switch methods are easily adjustable and geared to move so that angle can be kept constant. Handle is provided with control bias gear so that slight movement of thumb adjusts distance between electrodes.

## Parachute Harness

"Quick-Dry" kynarous, developed by Phoenix Paintbrush Co., Manchester, Conn., permits different areas within the same booth without time consuming manual adjustments. While in flight, kynarous can be wired independently of add-on conduct, and instantly tightened, if emergency, by pulling adjusting strap. Device is standard equipment on company's booth.

## CREATIVE ENGINEERING



## SNOWFLAKES IN DEATH VALLEY



• Frost enhancement of AdiResearch on the "Mighty Midget" refrigeration machine.

Washing less than 1 lb. of lettuce a man's hand. With an AdiResearch heat exchanger, the unit moves from 50°F. to below freezing - making inside the washing tank just as cold. Developed for the Lockheed F-104, the Douglas Skyraider, the A-4 Skyhawk, the Republic Thunderjet and others, it has the same capacity as equipment capable of cooling a five room house in according Death Valley.

In eight years, AdiResearch has acquired the world's largest laboratory and the greatest reservoir of experience in designing and building equipment for air pressure and temperature control at high altitudes.



In meeting the space, weight and performance standards of aerospace, this work has called for unusual creative talent and ingenuity. Today this wealth of engineering ability and "know how" is available to you - whatever field your interests may be.

Our research and development center will gladly discuss your needs in a desire to solve specialized problems in cabin pressure control, superchargers, air and gas expansion cooling, ed cooking, electric actuators, and electrical and thermoelectric air control.

Let us help put with your problems, write: AdiResearch Manufacturing Company, Los Angeles 45, California.

## SALES & SERVICE

### Receiver Development Key To Private Use of New Airways

Without lightweight, low cost VHF navigation and communications receivers, private pilots face dim future on medium-range airways.

By ROBERT BOTZ

Private pilots who have been bemoaning the notion and tight service restrictions recently announced by the Radio Technical Commission for Aeronautics would name various shortcomings of their cross-country stretches as possibly suspect.

Although the RTCA system is aimed primarily at fulfilling military and airline needs, private pilots were represented by the non-member RTCA delegation by J. B. (Doc) Hartnett and Oliver Wilson at the Airlines Owners and Pilots Association. Some sensible concessions to non-military civilians may have been obtained.

**First Phase:** The RTCA report is only the first phase in a long program. Real test of whether the new airway system will help or hinder private pilots will come as implementation of the proposed program. Big trouble in CAA's VHF airway program has been to path ground installations in ahead of airborne equipment development. This resulted in large expenditures for ground equipment that will not be put to any use for several years due to the lack of airborne equipment to utilize the ground stations.

Implementation of the program will also be placed on the basis of a three-member committee which has not yet been selected. Much of the treatment to be accorded private flying under the program will depend on whether it is represented by a voting member on the three-man committee.

One of the big considerations to private flying in the RTCA report was the fact implication that low frequency radio signals will not be de-encumbered until lightweight, low cost and reasonably accurate receivers are available in quantity to use the VHF transceivers will not be de-encumbered until 1963. The program has been a big question mark to private flying since airborne equipment to use it is still de-

served for airline-type aircraft.

**Receiver Development:** The RTCA report called for extensive government efforts, backed by research and grants if necessary, to develop airborne VHF omnirange navigation equipment suitable for private type planes. CAA has been assisting private pilots that such equipment is technically and economically feasible but there is strong evidence to the contrary. Charles Stinson, former Deputy CAA Administrator, claimed such equipment could be produced at a net price of about \$1000, roughly equivalent to the price of a VHF range receiver now, and Radio manufacturers estimated cost at \$1700 apiece which produced in lots of 5000.

NOFA strongly developed specifications for a receiver that would meet certain technical and technical specifications of its members. Manufacturers have estimated its cost in quantity production at more than \$1000.

That of course would make the cost of range receivers flying in CAA's newer program to the private pilot. NOFA estimates these at now 15,000 dollars per receiver, plus another 10,000 for installation.

**Cut Efficiency:** One solution proposed in that problem is to cut costs by refining operational efficiency of the equipment. In these narrow planes, pilots would be able to use only five of all the alleged 300 channels available on the CAA omnirange. Objective to this solution is that it reduces the safety factor of aircraft as equipped and thus lowers the safety factor of the entire system. Many private pilots feel that they would be better off continuing with the present low frequency long-distance range than with a first-class omnirange. Several private pilots living near the range in Michigan at Marquette, Marquette being up Mackinac in Michigan, over Grand Rapids to Detroit, where it turns along the Canadian side of Lake Erie, entering New York at Buffalo, Rochester, Syracuse and Albany are on the side.

tack a wedge at the current inaccuracy of the omniranges. CAA, largely under airline prodding, has been working on a program at its Indianapolis test center to bring the omnirange accuracy to a point where it is operationally usable.

At present, only VHF communications receivers for private pilots are entering the market. There is not even an advanced development model of the navigation receivers without which the open stage system is useless to private pilots.

**GEA Pushed:** Another point in the RTCA program that will be of considerable aid to private pilots is the recommendation that utilization of GEA be given first priority until the program begins to catch up on ILS installations. ILS is useless for private pilots and many types of military aircraft while my aircraft equipped for normal instrument flight and two-way radio communications can use GEA as a back-up landing aid.

Elimination of flow control from the new RTCA report can be considered the most important aid for private pilots. Under this system all airways traffic would be handled under a priority system that put private flyers at the bottom of the list. In practice, the flow control system proposed could have limited private flying from man arrays.

The RTCA flight program is still too nebulous to be evaluated from the private pilot's viewpoint. However, the solution remains the same as in the intense program—development of lightweight, low cost airborne equipment to use the various ground facilities.

#### Skyway No. 2 Sanctioned

CAA has designated in Skyway No. 2 a route extending from Seattle, Wash., to Boston, Mass., the second transcontinental airway in across continental section. As it is currently planned, the route will be 4040 miles wide and spanned by 100 standard airway markers and providing ground units.

The route goes west to east starting at Seattle cover Spokane and Wenatchee in Washington, crossing over the northern tip of Idaho and into Montana where important cities along the way include Helena, Billings and Miles City.

Bismarck and Fargo are on the route North Dakota. In Minnesota, the skyway swings slightly northeast to cover Duluth, Minneapolis and St Paul. It continues through Wisconsin, crossing Lake Michigan at Milwaukee, ending coming up Madison in Michigan, over Grand Rapids to Detroit, where it turns along the Canadian side of Lake Erie, entering New York at Buffalo, Rochester, Syracuse and Albany and on the side.



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## Simpler Field Rules Reported By CAA

Changes designed to simplify regulations for administering the Federal Airport Act, response to load and long distances from maintenance facilities, and the western industry, will be made effective May 1, 1948. Acting Administrator of Civil Aviation has announced.

- **Leasing contracts** are permitted for sale of gasoline, oil, aircraft repair, and sale of aircraft parts and equipment. However it is specified that commercial enterprises operating from these fields may not be allowed to repair and furnish parts for their own aircraft, and can provide that own gasoline and oil from other sources than the vendor who has the exclusive contract.
- **Sponsoring firms** may require from an operator maximum prompt, safe, quick and efficient service in fuel, oil and gas distribution, house rents, and immovable prices to all users.
- **Sponsors** are permitted to let contracts for construction without competitive bidding if agreement from the administrator is obtained in advance of contract letting.

The new changes have eliminated eight items previously used and consolidated two others, CAA reports. Project application and sponsor's assurance agreement forms have been combined into one form. Use of the same standard form becomes mandatory May 1.

Fees imposed by the new regulation will be applied on request by CAA to local sponsors who already have applied for grant often. Full test of the new regulations may be obtained from CAA Information Office, Washington 25 D.C.

### Legion Aids Mum, CAP

Minneapolis-Denver Post of the American Legion has become the first post in the nation to assume sponsorship of a state wing of the Civil Air Patrol. The local group plans an all-out drive to double membership, triple square foot buildings for the CAP in each city.

Cadet membership in Minneapolis' 15 CAP squadrons includes 450 boys and girls between the ages of 15 and 18, and a total of 300 senior members. The 80 cadets in the Minneapolis squadron spend an average of two and one-half hours each week at headquarters receiving instruction in motor aircraft, communications, meteorology, navigation, aeronautics and photogrammetry. Link trainer instruction also is given. The five Cadets of the state CAP are used for weekend flying of World War II planes.

Write for details.



Rear loader handles work loading from Rd. Black gate and gates to field. Colorful trailer and trailer above gate, and car-like plastic load carrier device.

## Airpark: Novel West Coast Model

Converted Navy blimp base featuring "Aerofoil" promises profits for San Diego operators in first 12 months.

Doll Met Airport, near San Diego, Calif., expects to become a major aviation asset with promise to realize its operators in less than a dozen 12 months on a capitalization of \$100,000.

Features which should interest possible lessees are location three-fourths of a mile heavily traveled Los Angeles-San Diego Highway 101, proximity to vacation playgrounds—Del Mar racetrack, La Jolla, Rancho Santa Fe, San Diego good restaurants, close administration building and lounge, an "Aerofoil" of six seated type mobile ground buster carrier equipped with a 1000 ft. and strong slant, 10' x 4' lounge, and a sun room patio that is rising to being third largest sun room in California.

H. C. Tolbold, president of Tolbold-Good Aviation, Inc., operator of the field, reports that rentals are becoming familiar with his "Aerofoil" and prefer it in hotels on the nearby highways. Normally it is filled to capacity on weekends. He has copyrighted the name, and hopes to capitalize on the use of it by similar leased units on other airports throughout the country.

**Rental**—Tolbold-Good Aviation claims in fullness of time, greater financing and easier ground leaseholdings, inexpensive, but blending perfectly with the California landscape surrounding the air park. Guests having the Aerofoil approach their planes through a rustic gateway from which hangs a signboard inviting them to "Rd. Black Sons".

For visiting writers the location offers a 2640 ft. runway, partly paved, and a paved parking area measuring 1000 ft by 600 ft. The field is lighted, but has no beacon.

A Government agency soon before the war Tolbold spent four years as a Navy blimp pilot, and was the first officer in charge of Doll Met when it was used as a blimp base during the war. Anticipating its possibilities he urged San Diego County to take over the old air base when they were declared surplus after the war, and was instrumental in obtaining the leasing of the field by the county to private operators.

To conclude a business arrangement with an existing unit, Tolbold organized his present company with George Good, a prominent San Diego attorney. They now hold a five year lease of the airport with an option to renew for five years. Supplementing their airport income is occupancy of the field by Macmillan-Murphy Co., a non-scheduled carrier and operator of the 50-mile route between San Diego and Los Angeles.

## Reckless Flying Runs Up Death Toll

One-third of all the 1000 fatalities reported in non-commercial flying in 1946 were a result of 198 low-flying accidents in violation of Civil Air Regulation, enroute to the CAB Safety Bureau has disclosed.

Analysis of low-flying accidents points strongly toward a need for greater alertness in pre-weather instruction with student pilots, and greater need for severe enforcement.

Virtually all accidents were the result of reckless andreckless flying of planes which were dived at in low level over







## How should you select a supplier of quality Aluminum?

All you need do is ask. Who are the users of a particular brand of aluminum? How has it performed for them?

Ask that of Kaiser Aluminum and you get this answer:

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What do they think of the performance of Kaiser Aluminum? The record speaks for itself. The demand for Kaiser Aluminum increases every day, from new customers to well-established.

These manufacturers have learned that the quality of Kaiser Aluminum is controlled every step of the way. From laboratory processes to finished product. What's more, they know it consistently meets the most exacting specifications, whether the emphasis be on drawing properties, tolerances, finishes, or surface appearance.

So, too, should specify Kaiser Aluminum for your operations. When you do, you'll be assured not only of consistent quality, but also of dependable delivery. You can plan production schedules with the knowledge that Kaiser Aluminum will arrive on time.

Call in a permanent engineer today—he can quickly show you how Kaiser Aluminum can benefit your operation most effectively.

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AVIATION WEEK, April 8, 1948

## Floor Under Airfreight Rates Urged by CAB Public Counsel

Brief to Board sees both certificated and uncertified carriers losing money with present charges; notes fares in combination passenger-cargo service.

8. **Islands**—In making passenger the present measure in the air freight rate case has been held before CAB.

State of the Board's public counsel have urged flat quick rates which be taken to establish minimum freight rates over long-haul certificated and uncertified carriers. The fares recommended are considerably higher than the lowest fares now in effect.

► **Independence**—Planned Brief of Philip G. Conner, William Hart, James Dalton and Lee Irvin evolved in part to minimize the present possibility of the all-cargo carrier. Charging less than two weeks after five major airfreight lines were unceremoniously by CAB examined for route certificates (Aviation West, Mar. 22), the latest development has further balanced the scale of the independents.

Public counsel recommended that CAB fix a maximum rate of 16 cents a ton mile, applicable to certificated and unceritfied carriers for shipments up to 2000 lbs. The rate is based on the cost of carrying freight in all-cargo DC-4s.

► **Complete Report**—A maximum rate of 144 cents a ton mile for shipments over 1600 lbs. and 13 cents a ton mile for shipments over 16,000 lbs. was urged until the Board can conduct a full and modern study to determine the difference in cost of handling large and small lots. In addition, both certificated and unceritfied carriers would be subject to almost more complete freight traffic load. Eastern imports to CAB.

The Board has already had negotiations with the eight major air cargo lines for the certificated air cargo and to mid-hauler defined rates of 7.4 cents for the Flying Tiger Line and 5.6 cents for Shick Airlines. Then CAB called a halt in Detroit by suspending further proposed tariff cuts.

► **Cargo Plane Necessary**—The brief emphasized that the all-cargo plane has revolutionized passenger cargo traffic in the backbone of the airfreight industry and will become increasingly important. It said flying of maximum freight weight on the basis of the cost of all-cargo equipment is the best way to compete with minor development of air transportation and the statutory standards of the Civil Aeronautics Act.

Whether or not CAB from unplanned freight rates higher than present levels,

present certificated lines will be forced by rising costs to raise charges above their average 123 cents a ton mile level. State already has increased its interest, and other independent carriers are expected to follow suit (Aviation Week, Mar. 15).

► **Financial Crisis**—But the certificated lines have indicated no desire to boost rates voluntarily. They are operating significantly now maybe by CAB at minimum charge by regulation. Unless the Board soon comes into full agreement with the certificated carriers the all-cargo lines will pack but a very heavy cargo load to the wall.

Increased CAB decisions on the proposed exception of freight forwarded and the request of Railway Express Agency to deal with unceritfied carriers also will have an important bearing on survival of some independent air cargo lines. The freight forwarders exception and RFA proposal are strongly opposed by the certificated carriers.

Public counsel stated that the rates of both certificated and unceritfied carriers are not being set. "And yet," said one group, "we find the competitive nature of existing firms rates to the freight business."

Availably, the brief emphasized, is rapidly becoming a big business and is growing far faster than passenger traffic. Revenue ton miles of freight traffic in 1947 by the 16 domestic trunk lines and only nine unceritfied cargo carriers were about twice the revenue ton miles of passengers carried by the entire domestic air transport industry in 1939, when CAB was created.

► **Average Revenue**—The first east coast tariff of 1947, average freight revenue of \$1.95, was CAB's first negotiated between Tuesday and Friday. That there is a minimum of cargo traffic for the numerous satellite airports is often cited.

Other major business originates at points where passenger flights with freight space are not equally available. Moreover, certain freight shipments are too large or too heavy for combination equipment. These conditions parallel to some extent the recent findings of CAB economists in the air freight rate case.

► **Threat to Industry**—Public counsel said and stressed the threat of certificated air lines by mid-year (high cost) theory of changing an aircraft operating against

"present specific commodity rate," the load stand.

Yet CAB, with tariff of Oct. 25 imposed by CAB attempted to extend this rate to all commodities and all points. It seems clear the specific commodity rates of the certificated carriers are justified here as not.

► **Subsidy Elimination**—Public counsel then stated that if the rates of the certificated carriers are below cost, CAB may be called upon to re-estimate the freight rates of all non-commodity carriers as an element of subsidy. "This would assure the unceritfied carriers could be driven out of the freight business because of than competitor's access to support from public funds and not because the latter were doing a better job."

The brief noted that the all-cargo plane today is carrying more than 70 percent of the freight flown by all carriers and that that percentage is growing. Among the embossed carriers alone, all-cargo planes will tend to haul 90 percent of the freight business in the near future (page 14).

► **Argument Refuted**—Public counsel went to great detail in refuting certificated carriers' claim that they can carry heavier cargoes because they can put it in limited space in combination passenger-cargo planes. Actually, the brief stated, the certificated lines have been able to use only a small proportion of such space.

During the first nine months of 1947, American United and TWA used only 6.8 percent of the 177,394,000 available ton miles of freight space on their combined passenger planes. For comparison, the early first quarter figures for 1946 show a but the gross load of this plane is not commercially viable. Certificated carriers also contended it costs more than four times as much to fly freight in a cargo plane (loss on a combination plane adds the added cost theory).

► **Neville Differs**—The brief explained that the demand for cargo space exists at different times and places than the demand for passenger space. Cargo grows primarily at night between 9 p.m. and 5 a.m., while most passenger flights are during the day. This is reflected between Tuesday and Friday. That there is a minimum of cargo traffic for the numerous satellite airports is often cited.

Other major business originates at points where passenger flights with freight space are not equally available. Moreover, certain freight shipments are too large or too heavy for combination equipment. These conditions parallel to some extent the recent findings of CAB economists in the air freight rate case.

► **Threat to Industries**—Public counsel said and stressed the threat of certificated air lines by mid-year (high cost) theory of changing an aircraft operating against

TRANSPORT

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to flight laws on nonpassenger airplane flights, for a limited time, permit passengers to understate their age up to 18. But, they said, the world expects development of air freight in the long run.

If the cost of service matches with the added overhead expense, carriers will not all cargo equipment could change freight rates as it sees worth a ton more. A complete acceptance of the new policies will take some time, but costs would have to change air freight charges. Consolidated Freightways, a road hauler, faces a less load to discuss competition from companies operating all cargo planes."

**Pilotless Methods:** If the future of freight air cargo generally related to air cargo, no combination aircraft this not come would be an easy cargo but not desirable. But that is not the case. The future of freight air cargo and cargo with cargo planes. The interim method of freight cargo should not be permitted to dominate the market.

Suspension of the air passenger fleet leads to an enormous advantage where a solid volume of freight could be carried for six cents a mile more than a large volume, frequent offering aircraft could result substantially higher rates."

## Air Force May Lease Ten C-46s to Shick

The Air Force has disclosed plans to lease 10 C-46s to Shick Airways for \$500 a month and other carriers may be invited to bid for the aircraft.

Rep. George V. Vreeland, chairman of passenger and industrial planning for the Air Force, told a House of Representatives subcommittee on congressional oversight that despite the C-46s are not surplus, but he said the planes are not needed now.

The proposed contract with Shick, which already operates 12 C-46s but not been signed each last year, but not do the proposed terms Shick would be required to transport the planes and crews at least \$100,000 per month, plus losses. The proposed rate in the plane may \$275,000. He explained that the Air Force has a large number of C-46s in storage, but that it would rather have them in use than continue keeping them in storage.

A number of airlines, both established and unaffiliated, have submitted interest in leasing C-46s under average rents similar to those offered Shick. U.S. Airways, St. Petersburg, Fla., which is slated to receive cargo agents from shortly after being made a major Northeastern air freighter's deal. The names had been using C-46s Eastern Air Lines, headquartered also have shown some interest in acquiring C-46s as cargo planes.



CONTINENTAL'S DOUBLEDECKER IV BOMBER

This converted North American B-25 bomber used by Continental Air Lines as an executive transport is also being employed to good advantage in training flight crews for Convair Lancer sprayers. Company officials state that the B-25's flying characteristics are very similar to those of the Convair. Continental reports to date it has delivered four 40-passenger Convairs for this spring. (AVIATION WEEK, Mar. 22)

## Helicopter Mail Volume Booms

**Bell Los Angeles Airlines**  
find itself in need as excess  
exceeded expectations.

Los Angeles Airways, the nation's first scheduled helicopter airline, last fall had been flying business during its first six months of operation, but at the same time has faced extra soaring fuel costs that threatened.

In October, for its first month of operation, LAA reported a loss of \$1,000 in its regular routes in the Los Angeles area.

By December, the volume had increased to \$2,000, and the March total reached still much (\$24,000). In addition, monthly passenger income increased to just \$20,000.

**Mail Pic:** Bell's carrier's name, and site—S-1, a plane helicopter has a cockpit, or long spacious out of the seat. "Avail" Feb. 18 LA had

a fleet of S-16s. Present Chinese liaison has now added C-12s to exceed

capacity to 10. In December, rate of \$14 a plane trip to be applied on a basis of 100 percent of capacity.

LAA began service with two S-16s, six S-3s, three S-1s.

In January, the company flew 95% miles a day, figure which was increased to 100% in December, 10, 142 in February and 16,714 in March. Total exposure for the six months were \$137,795, which must be met without credits from mail and pay.

"Nonstop revenue during the period was only \$81."

**Hugh Curtis-Curtis** received complaints about deficits in traffic analysis during the past year—this LAA's initial cost studies out of low Hughes wages, insurance expense, depreciation and equipment prices have continued to keep the company in the red.

President Böhm said insurance costs must also increase, holding the

policy out of the aviation business. Replacement cost of policies with offices in many cities at much higher cost.

**Night Flights:** Insurance expenses will be increased further during coming months because of demands insurance necessary for the added risk of night flying. The Post Office Department has composed night schedules of route segments and those of LAA's heliops are probably to start after dark, serving the public.

In January, the woodpecker's price of \$14 a plane from \$14 to \$75,700 will result in considerable higher departmental costs for all flight freight handled. LAA feels it will need at least one more helicopter—bringing it to five—a fact, the new figure. And a sixth can be necessary later.

**Equipment:** Life-Sense helicopters company has discussed at some length the use of an engined power plant. Initially, LAA contacted the service life of 500 hrs. in three years with another realistic value of about 10 percent.

Both engine expenses and disposal of LAA's motto is a rough and poor data reported, since ability per month to bring freight from each helicopter.

As a short, quiet major component will much determine in such a three year system is originally planned.

**Experiments:** Good—Find time to become instant in front of the rotor blades. With sufficient insulation, at 1000 hours, LAA was expectant only about one year's service from a set. President Böhm believes that field experience gained by LAA and other operators results in development of a more stable and less vibration helicopter, further insurance will occur if there will be no reason to increase depreciation charges commensurate with model schedules at service life.



MOVIE STAR

Capt. E. V. Rabinowitz, commanding World War II and now president and general manager of Radial Air Lines, was in Hollywood recently to make his seventh film, "Flight," a documentary film on the progress of the war. He is shown here seated in the picture, which will review aerial highlights from the Wright brothers to modern combat.

Implementation of night service and flying higher expense to LAA in the form of avionics lighting, communications, bows and navigation aids. The nation's 516 miles of service and 322 miles of landing areas are almost completely lacking in lighting facilities and adequate installations will cost at least \$20,000. Part of the lighting program is to be completed this year, the rest in 1949.

**Helpful Lease:** With the help of the government, the company is preparing to lighting and other night flying and LAA has obtained grants from the National Research Commission, and small portion of it will be charged for the lighting cost. Public and private plane may now meet the basic standards for research changes.

Wings for flight and ground passes are expected to increase 15 percent this year. LAA pilots on the part have averaged \$500 a month.

One unknown item of expense is the great wear and tear on fixtures from the heliops. Clouds of opinion speculate whether the naval operators have faced considerable difficulties.

**Renting Operations:** LAA is still sending out plans to substitute well-known types of some mobile post offices for the ground heliops, which are gradually located on the outskirts of each town. In the past the only mobile operation

has been on the shuttle flight from the Los Angeles Airport to the roof of the downtown Terminal Annex Post Office.

Progress of LAA's operations, which are now being embodied on a three-year temporary certificate, is being watched closely.

## Island Air Ferries Plans June 1 Start

**Island Air Ferries** continental—after a New Jersey start-to-operate between Long Island, N. Y., and southern Connecticut—is planning to begin operations with three DC-3s in June 1.

It will also operate shuttle service between LaGuardia Field, New York, to International Airport (Islip) and MacArthur Airport—both being built.

Five heliops Central Long Island and Bridgeport, Conn., will be \$1.50, at 13.5 cents per passenger mile. One possible refund fare from Grand Central Station to Bridgeport is \$1.92, including the Island Air Ferries fare, which will make the sum of three hours.

**Low Than Round-trip Exchange** fare, 1, 2, and New London, Conn., the fare will be \$3.65, in 21 cent per passenger mile. Comparable round-trip fare for the same route costs \$7.10, an exchange for Island Air Ferries makes the sum in four hours and fifteen minutes less than the regular costs.

On the route suggests that the "com muter user" of New York City, looks goodly down to or even into post passengers will. There are except from the 15 percent transportation tax on a rate of 10 cents per passenger mile.

Although there is no tax, DC-3 left in the fact that was exceeded some two years ago when Island Air Ferries fled with C-46s, Pan Am, Pan Am, president, and also because of MacArthur Field is making arrangements for the procurement of a new DC-3.

**— More —** The company will not operate with and pay.

**Cost of Waiting:** Island Air Ferries has already exceeded about \$100,000 or \$100,000 per operation, before any operating time begins. Private planes have been working at MacArthur Field on various experiments with C-46s appear performance.

Maintenance of the aircraft will be handled by Lockheed Aircraft Service at MacArthur Field.

## Wings With New Service

John J. Woods, general manager to the Allianz Negotiating Committee and American Airlines, is director of a new West Airlines service established by Russell D. Hobbs, Inc., New York public relations firm.



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McGraw-Hill World News

the time of this statement, Mr. Ryan had already applied for New York's license. The National and New York airports serve the Bob train.

Tabor set forth his complaint on Ryan's statements in a letter to the Board member late last month. In closing the allegory, Tabor declared that Tabor had been misled, adding he was greatly surprised by the letter. "Then, I did not think that Mr. Tabor would be willing to have the public know he had undertaken to pursue on behalf of Central Airlines, a member of the Board, a quasi-judicial hearing."

Meanwhile, Central Airlines has filed motions with CAAH asking that its application for a license to conduct air traffic control services at the airport involving the Middle Atlantic case and the Boston-New York-New Orleans petition for impacting both proceedings be before CAAH.

Colonial said that Bowser had qualified on the ground he has a personal bias and prejudices against Colonial. Bowser had expressed belief that Colonial ignored petition submissions that he opposed. Colonial's bid for a New York-Washington route between him but wanted for a bid a route serving Boston Air Lines (Aviation Week, Mar. 29).

## Akron Loses Fight On New Airport

(McGraw-Hill World News)

approaches of all directions. It's already been made.

►Advantages of Multi-CAAH and its use in the future, the ruled decision to Montreal Airport would be an inconvenience and expense to those air travellers. But it added that such inconvenience must be considered in relation to the transportation safety, reliability and types of routes available at the two airports.

One of the main field would reflect flight movements, late arrivals and late departures. CAAH declared. In addition, the elimination of all gross weight restrictions would result, added Spaul, available in the airways for both passengers and cargo.

McGraw-Hill World News stated, "But the city of Boston has incurred \$4,500,000 in its airport during the past 20 years and that Municipal Field was one of the first airports to be purchased by CAAH. But while authorisation of the proposed transfer would seem to provide a present the present and growing needs of the public are controlling."

## Canberra Turns Down ANA Expansion Plan

(McGraw-Hill World News)

MELBOURNE — Australian National Airways has rejected a plan to expand its Portuguese flag to operate its proposed international air services free from any interference from the Australian government.

The two-airline proposal was launched in ANA's Melbourne headquarters when Camberra gave the go-ahead to the airline to expand the range of its plane ANA planned to expand a London service via North America and another via Mexico City and Brazil. The new international routes as to tap the sales of the increasing traffic between the Americas.

►On June 10, the Board of Directors of the city of Altona chose which sought to prevent American, Eastern, Pan Am and United Air Lines from serving the community through the new Greater Manly Memorial Airport (37 miles from the center of Altona) instead of the Altona Field (five miles away). The city told asserted that the shift to use of the more distant field would cause its citizens economic hardship.

ANA had not yet obtained an own government permission to expand the plan. It was thus forced to get in touch with Camberra and to assure the Commonwealth Government that it did not cause any other than other than the new long-term Australian Airlines (Qantas) for new contracts. There is no indication though, that a Commonwealth-owned line is seeking to exploit ANA's idea.

►Ownership Tangke-ANAs plan to register the British flag under the Dutch or Portuguese flag, good, goes the entire. Both countries have aviation interests and ramifications to the north of Australia. But there is

another legal obstacle. ANA's license is due next month.

Australian navigation regulations specify that foreign airlines that wish to operate in Australia must be awarded administratively. So, ANA will give its flag to the service. Just how substantial that foreign stake must be in the regulation don't say. The great Canberra-wide discussions to turn things down on that plan, too.

## British Studying Designs For New Distance Plane

(McGraw-Hill World News)

LONDON—In advance of an air service from BOAC of its newest aircraft for such a plane, the Ministry of Supply three years ago invited the British aircraft builders to propose designs studies of a long-range transport for Europe.

►Operated with three utilized range of 14,000 miles with a payload of 9,000 lb. (twice, it is suggested, weight is made up of 10 passengers and 1,500 lb. of mail or freight), speed 450-500 mph (economy) at a altitude not exceeding 30,000 ft.

Two of the firms declined to undertake the study, but the other three are understood to have completed and submitted their designs.

The Ministry explained the Government felt steps should be taken in soon as those appeared to be a possible basis need for such a plane, either BOAC or some other (i.e. foreign operator) BOAC will be obliged to fit in on new aircraft design. The submitted designs, even though the actuals are mentioned that it does not give any specific information at present for a programme of this performance.

## Mexico-Spain Air Link

Mexico has a new transportation tie with Spain in several routes. Madrid, Barcelona and Seville are the first extremes. Mexican Register, Aerovias Gobal.

►Financed by American businessman William Gorst and sanctioned by the Mexican government, the line already has direct contacts with both Spanish and Mexican governments.

The initial operations begin early in January. ANSA has been asked to permit a stop at New York as part of the service.

## New Routes Sought

Aerovias Sud Americanas Inc., St. Petersburg, Fla., has asked CAB for a certificate to carry cargo on a non-scheduled basis between St. Petersburg and points in the West Indies, Central and South America. The company now owns one C-46 and two C-47s.

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# EDITORIAL

## The Betrayal of Air Power

Gen. Dwight D. Eisenhower, Mar. 12, 1945:

"City after city has been systematically flattened. Our artillery could scarcely add to the completeness of the material destruction."

Reichsmarschall Hermann Goering, May 11, 1945:

"The American Air Force made the Allies effective successful."

Field Marshal von Rundstedt, May 5, 1945:

"Three factors defeated us in the west, where I was in command. First, the enormous superiority of your Air Force which made all movement in daytime impossible. Second, the lack of motor fuel. Third, the systematic destruction of all railway communications so that it was impossible to bring one single railway train across the Rhine."

Field Marshal Albert Kesselring, German commander, May 16, 1945:

"Allied air power was the biggest single reason for Germany's defeat."

Field Marshal von Kluge, German commander, June 14, 1943:

"Every movement of the enemy is protected by its Air Force. He paralyzes all our movements by employing fighter bombers on an unprecedented scale."

Gen. Nishio, member of the supreme Japanese military council:

"It was air power which beat Japan, and the greatest feeling is that future wars will be fought entirely in the air. It is unfortunate that the Japanese were not willing to make the decision . . . and concentrate all their creative effort in an area capable of waging such a war. We never dreamed air power could effect war to such an extent and we believed we could carry on with a hard drive through the war."

Adm. C. W. Nimitz, Commander-in-Chief, Pacific Fleet, May 22, 1945:

"Believe we have fought the last war in which our homeland will be spared the violence of our enemies. It is a military fact that the airplane and the potentialities of the rocket have rendered the continental U. S. vulnerable to direct assault."

George Marshall, Secretary of State & Ex-Chief of Staff, March, 1948:

"I think one of the great difficulties in regard to air power and the American people's attitude toward life is that application of air power involves so much loss of life of noncombat civilians and children as well as grown people. That is almost unavoidable and very terrible. . . . We had reached the point in the last war where we were so imbued with the pacifism of the Japanese and the Germans that the American people were willing to go through with it. I thought it was vital that they should. But it is a terrible thing to do to use that type of power. If you are confronted with that in the beginning of a war, you are also confronted with every certain manner of the American people.

"They have to be driven very hard before they will agree to such drastic force. . . . It is not that I am proposing . . . that we do not have air power, and I am not at all. . . . It may not be unavoidable but I do not think it is going to be the controlling factor and I think it is a tragic anomaly when it has to be done."

What does the American public think about air power? On Mar. 17 the Gallup poll released results of questions asked representative voters in every section of the country just prior to the Geneva-Yalta conference:

The question was: Do you think the U. S. should increase the size of its Army? Navy? Air Force? Answer were: Army, yes 61 percent, no 29 percent; no opinion 9 percent. Navy, yes 63 percent, no 26 percent; no opinion 11 percent. Air Force, yes 54 percent, no 17 percent; no opinion 9 percent.

General Marshall goes on to condemnatory military analysis and the demands of the American people. Further, the Administration by their ridiculous insistence that the Army, Navy and Air Force share dollars for dollars has betrayed air power. They stupidly close their eyes to the lessons of World War II.

ROBERT H. WOOD

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